Coconino National Forest Plan Revision

Springs

General description

- Springs, and other natural waters are centers of high biological diversity and are important to tribes who have traditionally used lands within Coconino NF.

- Wildlife is more concentrated around open water sources than in the general landscape for food and water. It is particularly important for birds, bats, and invertebrates. Species that require water for part of their life cycle (obligate aquatic and semi-aquatic species) on the Forest are entirely dependent on these limited and scattered water sources. Collectively these resources contribute to connectivity for wildlife across the landscape.

- Springs are frequently more stable ecologically than surrounding upland ecosystems, and may offer biological refugia for some species, particularly narrow endemics.

Desired conditions

- Springs and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning. Water flow patterns, recharge rates, and geochemistry are similar to historic levels.

- Within its capability, spring flow and water quality is adequate to maintain aquatic and riparian habitat and water for wildlife. The necessary physical and biological components provide habitat for a diverse community of plant and wildlife species including cover, forage, available water, microclimate, and nesting/breeding habitat.

- Riparian dependent plant and animal species are self sustaining and occur in natural patterns of abundance and distribution. Macroinvertebrates are abundant and diverse. Native amphibians are free from or minimally impacted by non-native predation and diseases.

- Springs have appropriate plant cover to protect banks and shorelines.

- Hydrophytes and emergent vegetation are abundant in areas with persistent water. Floating plants such as pond lilies and overhanging vegetation along springs are resilient to natural disturbances.

- Location, condition, and water right status of springs are known.

Objectives – *[none currently defined]*

[Will identify prioritization for and strategy for spring restoration, including consideration of rare and endemic species.]

Guidelines

- Access to springs should be limited to trails or entry points that minimize erosion, trampling, compaction, and inadvertent introduction of non-native and undesirable plants, animals, and disease.

- In aquatic areas, the Arizona Game and Fish Department protocol should be followed to prevent the introduction and spread of a chytrid fungus (Batrachochytrium dendrobatidis) that kills amphibians.

- Fences constructed around springs should allow bats and desirable wildlife to pass through unharmed.

- Where possible, structures that divert or alter spring flows should be minimized.

Management Approach

- Work with other agencies, organizations, partners, and stakeholders regarding spring inventory, exchange and pooling of data, and spring restoration across the southwest, particularly for springs with populations of rare or endemic species.

- Work with partners and stakeholders to develop strategies for restoration of upland watersheds to improve stream flows.